Older Driver Working Group
Proposed Strategy for Presentation to the NC ECHS
October 24, 2006

Strategy – Identify Hazardous Intersections and Improve Their Safety for Older Drivers

General Description

This strategy outlines a process by which intersection locations in the state that pose particular problems for older drivers will be identified, and changes recommended to improve their safety. The goal of the strategy is to reduce the number of older driver crashes at intersections while at the same time improving safety for all drivers.

Intersections are especially hazardous for older drivers, in part because older adults tend to accumulate more miles driving on local roadways. However, declining functional abilities – visual losses, longer reaction times, slower processing of visual stimuli, and a reduced ability to attend to more than one object at a time or to switch attention between objects – can also make intersection negotiation hazardous for older drivers. In 2005, 38% of older driver crashes occurred at roadway intersections, compared to less than 30% for drivers under age 65. Left turns are especially problematical for older adults, as is turning onto a major roadway from a minor, stop-sign-controlled roadway.

As part of this strategy, the Traffic Engineering and Safety Systems Branch of NC DOT will examine NC crash data to identify intersection locations in the state that have a high number and/or high proportion of crashes involving drivers 65 or older. These data will be compiled and updated annually as part of the DOT's annual Highway Safety Improvement Program. A subset of the most dangerous intersections will be selected for a more detailed examination of crash patterns. The results will be reviewed with input from local engineers, law enforcement and senior citizens to identify design or operational changes for improving safety at the site. The input from senior citizens is viewed as especially important, and will be accomplished through an informal network of volunteers recruited by AARP, AAA and others representing each of the State's 14 Highway Divisions.

Depending on the identified needs and available funds, it is anticipated that 20-25 intersection locations posing particular problems for older North Carolina drivers will be upgraded annually. In addition, the detailed reviews may suggest systemic roadway improvements that can be instituted to lower the number of older driver crashes, and presumably all crashes, statewide.

Technical Attributes	
Target Audience	The primary target audience for this strategy is older drivers, although the results are expected to benefit drivers of all ages.
Expected Effectiveness	The approach outlined above was followed by the Roadway Subcommittee of the NC Senior Driver Safety Coalition using 1999-2004 NC crash data. The exercise identified

	31 intersection locations in the state where drivers 65 or older were involved in 25% or more of the crashes, including 17 intersections where older drivers comprised 30% or more of crash-involved drivers. In addition, there were 69 intersection locations in the state where 25 or more older driver crashes occurred. The subcommittee obtained copies of the crash reports for these sites and initially selected five to investigate in greater depth in an attempt to identify common factors specific to older drivers that may be amenable to roadway countermeasures. Detailed site maps were prepared summarizing characteristics of crashes at each location, and members of the group conducted site visits to gather further information. Some patterns emerged from the review of the crash data, such as a preponderance of left turn crashes onto multi-lane roadways. In addition, it was found that all three of the interchange locations with high numbers of older driver crashes involved a similar, non-standard design, with all entrance and exit ramps on the same side of the roadway. At these locations, improved signage was identified as a potentially effective means of alerting drivers and increasing safety (see related strategy). Thus, the approach has proven useful both in regard to identifying problem intersections, as well as suggesting potential improvements to lower crash risks.
Keys to Success	A key to the successful implementation of this strategy is the involvement of older drivers in the review of the detailed site maps and in identifying potential solutions to a problem intersection. Older adults "see" things differently, both literally and figuratively, than do younger drivers, and may be able to point to a solution missed by state or local traffic engineers. In addition, older adults can help galvanize attention to the issue at the local level. The Senior Driver Safety and Mobility Options Community Forums being hosted by the Coalition are one potential avenue for recruiting senior volunteers and soliciting community input. AARP and AAA can also assist in the process. Familiarity of state and local engineers with FHWA's "Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians" can also be a key to identifying design and operational improvements beneficial to older drivers. (See related proposed strategy.)
Potential Difficulties	It should be noted that many factors (congestion, presence of commercial driveways, roadway topography, etc.) contribute to a particular location's crash history, and there may not be an identifiable "fix" for all high crash locations. Also, the number of intersections that can be targeted for improvement each year will be contingent upon available NC DOT / Hazard Elimination resources.
Appropriate Measures and Data	Both crash and exposure data will be needed to track the effectiveness of the program. Ideally, both total crashes and crashes involving an older driver should decline at the treated intersections (adjusted for any increases in traffic at the location). In addition, the proportion of crashes involving an older driver should also decline.
Associated Needs	None identified.
Organizational, Institutional, and Policy Issues	The NC DOT Traffic Engineering and Safety Systems Branch has indicated its support for this activity.
Issues Affecting Implementation Time	None
Costs	No additional funding is being requested at this time. The proposed strategy would be carried out as part of NC DOT's Highway Improvement Program planning and safety engineering activities.
Training and Other	None required.

Personnel Needs	
Legislative Needs	None identified.